REMARKS

The undersigned has amended claims 1 and 7 as set forth above. Non-elected claims 28-34 have been cancelled to expedite prosecution. The undersigned reserves the right to file the non-elected claims in a divisional application. In the non-final Office Action mailed January 13, 2004, the Office has addressed elected claims 1-27 as follows: claims 1-27 are rejected under 35 USC 112 second paragraph as being indefinite; claims 1, 2 and 4 are rejected under 35 USC 103 as being unpatentable over Hamsa in view of Nomura; and claims 3, 5 and 6 are rejected under 35 USC 103 as being unpatentable over Hamsa in view of Nomura and further in view of Muro et al. The undersigned wishes to thank the Examiner for indicating the allowability of claims 7-27

In view of the amendments and remarks herein, the undersigned respectfully requests reconsideration of the rejections.

Rejection of Claims 1-27 Under 35 USC 112

Independent Claims 1 and 7 have been amended as set forth above. The undersigned respectfully submits that these changes moot the rejection under 35 USC 112.

Rejection of Claims 1, 2 and 4 Under 35 USC 103 in View of Hamsa and Nomura

Independent claim 1 includes the following limitations:

1. (Currently Amended) A system for combining spatial and linear ~~(attribute)~~ data in a single relational database, comprising:

a computing device having a user interface;

a relational database connected to the computing device and accessible by structured query language, the database comprising spatial and attribute data related to geographic information; and

means for providing dynamic segmentation of permanent anchor sections, an anchor section defining a spatial reference for a geographic element in the relational database.

As stated by the Examiner, "Hamsa is silent on a dynamic segmentation of anchor sections." The Examiner cites Nomura as disclosing " a map database and providing dynamic segmentation of permanent anchor sections (a road intersection) defining a spatial reference for a geographic element in a database." The undersigned has reviewed Nomura, specifically, the sections cited by the Examiner to support the above-identified disclosure and fails to see where Nomura teaches or suggests "**means for providing dynamic segmentation of permanent anchor sections**" as required by claim 1. (emphasis added). More particularly, the undersigned submits that Nomura is an example of what is old in the art. Referring to paragraph [0004] in the *Description of the Related Art* section of the specification for the present application,

> **[0001]** GIS applications have traditionally used a link-node network to represent road networks, where a link represents a section of road. A node, which occurs at the ends of the link, represents either an intersection between links or the end of a road. Because nodes (i.e., intersections) can only occur at the ends of a link, most changes to a road network require splitting of existing links. For example, adding a new intersection in the middle of an existing link requires that the link be split at the intersection point to form two links. Splitting a link has serious adverse consequences. Any references to the original link (e.g., the assignment of a pavement type to a portion of the link) become invalid. In the case of a single data repository, complex data maintenance activities can automatically correct for these changes. However, in a distributed data environment, an automated correction methodology is not feasible.

Referring to column 4, 2nd paragraph, Nomura states, "when there is a distinct structure such as a bridge, tunnel or the like, on a road, the portions of the road preceding and following the structure constitute separate link strings." Accordingly, assuming that the links in Nomura are anchor sections, these are not "permanent" as required by claim 1, since they are susceptible to being split into separate links by the prior art in accordance with new intersections or the like.

Further, "dynamic segmentation" is defined in the specification as:

> **[0002] Dynamic Segmentation.** Dynamic segmentation of an Anchor Section means that the Section can be dynamically and virtually segmented by creating interior intersections or multiple varying properties associated with portions of the Anchor Section without forcing the section to be segmented into multiple sections, where each new section would have the new property or intersection associated with it.

Clearly, there is no discussion in Nomura of "dynamically" and "virtually" segmenting links as described in the specification and required by the claims. In Nomura, the data in the map database is static, with links (anchor sections) and nodes (intersections) defined and unchanging. Nomura does not teach or suggest a means for creating interior intersections or multiple varying properties associated with portions of the links, without further segmenting the link.

The Office has failed to establish a *prima facie* case of unpatentability since neither Hamsa or Nomura teaches or suggests **"means for providing dynamic segmentation of permanent anchor sections."** Pursuant to MPEP Section 2143, the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. Further, in order to establish a *prima facie* case of obviousness, three basic criteria must be met:

(1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;

(2) there must be a reasonable expectation of success; and

(3) **the prior art reference (or references when combined) must teach or suggest all the claim limitations**.

The undersigned respectfully submits that claims 1, 2 and 4 are allowable over the combination of Hamsa and Nomura.

Rejection of Claims 3, 5 and 6 Under 35 USC 103 in View of Hamsa, Nomura and Muro

Claims 3, 5 and 6 necessarily include the limitations of independent claim 1. As discussed above, the combination of Hamsa and Nomura does not teach or suggest the combination of limitations in claim 1. Further, Muro does not cure the deficiencies of Hamsa and Nomura. Accordingly, claims 3, 5 and 6 are submitted to be allowable over the cited prior art for at least the reasons cited above.

Additionally, although Muro describes the maintenance of a time series of changes that can include changes to the geometry of a feature, the maintenance process of Muro is directly opposed to that of the claimed invention whereby the maintenance of a permanent anchor section is paramount. As described in Muro, every change is recorded by adding a new feature (with a corresponding new feature ID) and using attribute data to link it to previous and future versions of that feature. Because the feature IDs serve, in a relational database, as the relationship keys linking different data to a feature, this approach requires complex procedures to update all feature relationships whenever a feature is updated, including requiring introduction of a new feature ID referring to the same feature in order to complete the update.

One of the motivations for permanent anchor sections is to eliminate the need for such complicated update procedures by maintaining the same anchor section ID. This is particularly useful in a distributed environment with intermittent connectivity between subsystems because disconnected subsystems will not be aware of changes to the feature IDs (as in Muro). Eliminating unnecessary changes to these IDs helps prevent "breaking" ID-based relationships in distributed systems.

Accordingly, claims 3, 5 and 6 are submitted to be allowable over the cited prior art for these additional reasons as well.

CONCLUSION

In view of the amendments and remarks set forth herein, the undersigned representative submits that all of the pending claims are allowable over the cited art. A notice of allowance to this effect is earnestly solicited. Please do not hesitate to contact undersigned with questions.

Respectfully submitted,

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By: Dawn Marie Bey

Dawn-Marie Bey (Reg. No. 44,442)
KILPATRICK STOCKTON LLP
Suite 900
607 14th Street, N.W.
Washington, DC 20005
(202) 508-5889